



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,758	03/19/2004	Walter Feller	4007	7686
63151	7590	08/27/2007		
MARK BROWN 4700 BELLEVIEW SUITE 210 KANSAS CITY, MO 64112			EXAMINER ZANELLI, MICHAEL J	
			ART UNIT 3661	PAPER NUMBER
			MAIL DATE 08/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/804,758

Applicant(s)

FELLER ET AL.

Examiner

Michael J. Zanelli

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2007 and 15 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is responsive to the communications filed 4/26/07 and 6/15/07. Claims 1-11 are pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claim 9 is objected to because of the following informalities: At line 2 "enclosures" should be --enclosure-- (see claim 6, line 2). Appropriate correction is required.
4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parkinson et al. in view of Pinto et al..

A. As per claims 1, 10 and 11, Parkinson discloses a sensor system for vehicle steering comprising a global navigation satellite sensor system including a receiver and multiple antennas at fixed spacing on a vehicle (col. 5, line 64 to col. 6, line 2) to determine vehicle position and at least heading based on carrier phase corrected real time kinematic position differences (col. 6, lines 6-14) whereby corrections may be for position errors caused by the pitch and roll of the vehicle as it travels over terrain (col. 9, lines 6-15). A steering control system receives position, heading, and other determined parameters to control the steering of the vehicle (col. 6, lines 6-18). Although Parkinson discloses taking into account vehicle velocity at col. 6, lines 33-37, the document does not explicitly state that the velocity is obtained by the global navigation satellite sensor system. However, one of ordinary skill in the art would have recognized that the velocity information could be provided using the well-known relationship between speed/distance/time. Parkinson suggests that the vehicle velocity is determined relative

to position and time measurements insofar as parameters are dynamically calculated over successive measurement intervals (col. 6, lines 30-37). Claims 1 and 10 have been amended to include gyroscopes to provide rate of change in the heading angle and rate of change in the roll angle and to integrate the values with the information generated from the global navigation satellite sensor system.

B. At the time of applicant's invention it was known in the navigation and vehicle control arts to combine GPS and inertial systems (i.e., gyroscopes) to improve the accuracy of navigation calculations (see as exemplary Pinto:[0127]). One of ordinary skill in the art would have found it obvious to improve the accuracy of the calculations of Parkinson by using inertial sensor (gyroscope) inputs in combination with the information provided by the global navigation satellite sensor system. The more accurate position/attitude information would have resulted in improved steering control such that the vehicle followed the desired trajectory.

C. As per claims 2 and 3, as above whereby the steering of the vehicle may be controlled such that its heading follows a desired trajectory (Parkinson: col. 6, lines 6-14; col. 8, lines 44-49).

D. As per claims 4 and 5, as above whereby the claims merely recite known characteristics of gyroscopes in determining navigation parameters versus those computed from global navigation satellite sensor systems (i.e., GPS).

E. As per claims 6, 7 and 9, as above whereby the physical configuration of the antenna/receiver structures on the vehicle would have taken into consideration the type of

vehicle, environmental concerns, costs, manufacturing, etc., consistent with the operation of the system.

F. As per claim 8, as above whereby the global navigation satellite sensor system includes at least GPS (col. 1, lines 6-11).

5. **REMARKS**

A. With regards to the amended claim language, the incorporation of the gyroscopes does not distinguish the claims as argued insofar as this subject matter was addressed in the rejection of Parkinson in view of Pinto et al. (see first Office action, paragraphs 11-12). The remarks included in both amendments fail to address the *combination* of Parkinson and Pinto as it was applied against original claims 4-7 and 9. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

B. The examiner wishes to further point out that he raised this issue during the interview conducted 5/21/07 (see Substance of Interview). The examiner further pointed to the appropriate section of Parkinson which appears to disclose the basic concept of applicant's invention. Applicant's remarks do not address any of these issues.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

Art Unit: 3661

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Zanelli whose telephone number is (571) 272-6969. The examiner can normally be reached on Monday-Thursday 9:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J. Zanelli/
Primary Examiner
Art Unit 3661